

Recent Changes in the Parasite Complex of Armyworms

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It is a matter of repeated observation in the field of entomology that the most common and obvious phenomena fail to be recorded. As these are often *ipso facto* phenomena of the greatest biological and economic interest, neglecting them may easily result in confusion or unnecessary work for future entomologists. To prevent such an occurrence in connection with one of the Territory's oldest and most important problems, certain changes in the parasite complex of armyworms are here recorded.

These changes have been observed only on the island of Hawaii, where they appeared in connection with a fairly severe infestation of *Laphygma exempta* (Walker) during the first four months of 1948, but it is probable that they have also taken place on other islands. They involve the apparent elimination from the complex of some parasites of earlier introduction and their substitution by two braconids, *Apanteles marginiventris* Cresson and *Meteorus laphygmae* Viereck, introduced from Texas in 1943, and the self-introduced immigrant tachinid, *Eucelatoria armigera* (Coquillett), which was first discovered on Oahu in 1942. These three species, to judge from their relative abundance, now rank in the complex in the order given, and their effectiveness far exceeds that of all the other larval and pupal parasites combined. Whether their effectiveness is also greater than that of the two egg parasites *Trichogramma minutum* Riley and *Telenomus nawai* Ashmead is not shown by our observations but appears possible.

The principal older established larval and pupal parasites, judging again by their abundance in the cane fields of the "Big Island" during the early part of 1948, now rank as follows: *Hyposoter exiguae* (Viereck), *Chaetogaedia monticola* (Bigot), *Frontina archipivora* Williston, *Archytas cirphis* Curran, and *Euplectrus platyhypenae* Howard. *Hyposoter*, *Chaetogaedia*, and *Frontina* are fairly common everywhere. *Archytas* is scarce everywhere but, as has always been the case, is still more easily found in the region of Kapoho than elsewhere. *Euplectrus*, which formerly ranked first or second in the complex, is now so scarce that only a single instance of its work has been observed by the writer this year.